EXHIBIT 3

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PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Appliances for Preparing Coffee

I, ALFRED HATZ, of Swiss Nationality, of Vico-Morcote, Ticino, Switzerland, do hereby declare the invention, for which I pray that a Patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an appliance for preparing coffee.

It is known to connect a pressure cooker to a rigid pipe, the other end of the pipe being connected to a coffee percolator, the arrangement being such that heated water in the cooker is forced up the pipe by steam pressure and is then squirted into the percolator.

According to the present invention there is provided an appliance for preparing coffee beverage, comprising a pressure cooker, a coffee percolator and tubing leading from the lower portion of the inside of the pressure cooker to the top thereof and from there to the top of the percolator, the tubing situated between the pressure cooker and the percolator being flexible, the tubing being connected to the top of the pressure cooker in steamtight manner but being readily detachable, the percolator being of such form that it can easily be placed directly onto a receptacle, for example a cup or a jug, the bottom of the percolator being formed with an opening to permit beverage to pass from the percolator into such a receptacle.

In order that the invention may be clearly understood and readily carried into effect, reference will now be made, by way of example, to the accompanying drawing, in which:—

Figure 1 shows a vertical section through one part of a two-part appliance for preparing coffee,

Figure 2 shows a vertical section through the other part of the two-part appliance,

Figure 3 is a detail of Figure 1 on a larger scale, and

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Figure 4 is a detail of Figure 2 also on a larger scale.

Referring to Figures 1 and 3 a pressure cooker 10 comprises a saucepan 11 and a lid 12 which are engaged one with the other by means of a bayonet joint. In order to ensure that when the lid 12 is engaged on the saucepan the joint is pressure-tight, a rubber sealing ring 13 is provided and is seated in the lid 12, the ring 13 being forced against the rim of the saucepan 11, during operation of the cooker, by pressure therein.

A relief valve includes an externally screw-threaded valve housing 14 which engages in a screw-threaded hole in the lid 12 and which houses a valve member 15 movable along the axis of the housing. The lower end of the valve member 15 rests upon a frusto-conical shoulder 16 formed on the inner surface of the housing 14, the housing being screw-threaded on its outer surface, at that end opposite the shoulder 16, for reception of an internally screw-threaded nut 17, through which the valve member 15 protrudes. A helical compression spring 18 is located in the cylindrical gap between the member 15 and the housing 14, one end of the spring being seated on an annular shoulder of the valve member, the other end being seated on an inwardly-projecting flange formed on the nut 17, the spring thus biassing the member 15 towards the shoulder 16. A snap ring 19, which is inserted in a peripheral groove in the member 15, prevents the nut 17 being removed from the member when the nut is unscrewed from the housing 14. The nut 17 is externally protected by a heat-insulating cover 20 (as shown in the drawing), but, as an alternative, the nut itself could be made of a heat insulating material. The parts 14 to 18 constitute the relief valve.

The valve member 15 is bored through axially and is connected to the upper end of a pipe 21 which is co-axial with the bore in

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the member 15 and which nearly reaches to the bottom of the saucepan 11. A flexible pipe 22 is also connected to the member 15 in such a manner that the pipes 21 and 22 are interconnected by the bore in the member. As shown, the pipe 22 is of heat resistant material, but it could consist of metallic tubing in the form of helically-shaped windings or members joined in steam-tight manner to each other.

Referring to Figures 2 and 4, the other end of the pipe 22 is connected to a coffee percolator 30 which includes a saucepan-like part 31 having a lid 32 which is engaged on the part 31 by means of a bayonet joint. The part 31 and the lid 32 are fitted with handles 33 and 34 respectively, which project radially outwards and are heat insulated. The handles 33 and 34 facilitate opening and closing of the percolator and transportation thereof.

The pipe 22 is connected to an axial bore in an externally screw-threaded nipple 35 which passes through an aperture in the lid 32 and engages in an internally screw-threaded mating-piece 36 situated on the inner side of the lid 32. The mating-piece 36 has an axial bore which contains a ball 37 and a compression spring 38, the bore in the mating-piece 36 being larger in diameter than the bore in the nipple 35, thus causing an annular shoulder 39 to be formed. The spring 38 biasses the ball 37 upwards against the annular shoulder 39, thus closing the axial bore of the nipple. The mating-piece 36 has several radial ports 40 serving as outlets. The parts 35 to 39 thus form a valve which prevents water passing from the pipe 22 into the percolator 30 unless the pressure in the pipe 22 exceeds a value dependent upon the predetermined strength of the spring.

The mating-piece 36 has a head 41 at its lower end, and is used to support a plate-like sprinkler 42 below the lid 32, thus affording a hollow space between the sprinkler 42 and lid 32. A packing ring 43 or a gasket of rubber or the like is supported by the flanged periphery of the sprinkler 42. A basket-like strainer 44 having a perforated bottom is suspended in the part 31 and serves to hold the ground coffee, a filter paper being advantageously interposed between the bottom of the strainer 44 and the ground coffee. With the lid 32 correctly engaged on the part 31, the packing ring 43 is clamped between the inner side of the lid 32 and the upper edge of the strainer 44, thus preventing water and steam issuing forth from between the lid 32 and the part 31.

The bottom of the part 31 of the percolator 30 has a central outlet 45 for coffee beverage, the bottom being conically inclined down to said outlet, but having an annular step 46 which permits the percolator to be centred on a receptacle, for example, a coffee cup or a jug, subsequent to being placed thereupon. The step 46 thus prevents excess lateral movement of the percolator on the receptacle. Several concentric steps could be provided on the bottom of the part 31. The diameter of the side wall 47 of the part 31 decreases proportionately in the downwards direction, thus enabling the part 31 to be suspended in the mouth of an appropriately sized receptacle, whereupon the part 31 will centre itself, provided the mouth of the receptacle has a width between the largest and smallest diameters of the part 31.

A method of preparing coffee beverage by means of the afore-described appliance is as follows:—Water is poured into the saucepan 11, whereupon the lid 12 is fitted on the saucepan, and the pressure cooker is placed on a heating means. A filter paper and ground coffee are arranged in the strainer 44, the lid 32 is fitted onto the part 31 and subsequently the percolator 30 is placed on a jug or cup for reception of the coffee beverage. During heating of the water in the cooker 10, steam forms in the remaining space and, upon attaining a low, but substantial, pressure, forces the water up the pipes 21 and 22. The valve consisting of the parts 35 to 38 at first prevents the low-pressure steam and water from flowing into the percolator. Only when the pressure in the pipe 22 is, for example, 0.5 atmospheres above atmospheric pressure, will the ball 37 be pressed down against the action of the spring 38, whereupon hot water under pressure passes into the percolator 30 and is forced through the ground coffee. The sprinkler 42 causes the water to be distributed uniformly over the ground coffee in the strainer 44 and the prepared coffee beverage subsequently flows out through the outlet 45.

Should the pressure of the steam in the cooker 10 rise inadmissibly high, the valve member 15 together with the pipes 21 and 22 will be raised from the shoulder 16 of the housing 14 against the action of the spring 18, whereupon the high-pressure steam is permitted to escape.

When the appliance is not in use for preparing coffee beverage, the nut 17 can be unscrewed from the housing 14 and then the parts 15 and 18 of the relief valve, together with the pipes 21 and 22, can be removed from the cooker 10. When the cooker 10 is intended to be used for cooking food, a second valve member, not having a bore down its centre, may be fitted in the housing 14.

The above-described method of preparing coffee beverage ensures that the beverage is made under pressure, thus making so-called express coffee.

In modified embodiments (not shown)

where the cooker includes an unremovable relief valve, another outlet may be provided on the lid of the cooker to contain a plug which has been bored through axially and which carries pipes similar to the pipes 21 and 22. In that case, when the cooker is used for preparation of food, the additional outlet will be closed by a screw-cover or the like.

If the perforations in the bottom of the strainer 44 are sufficiently fine and the ground coffee is coarse-grained, a filter paper is unnecessary.

In another unshown modified embodiment, the bottom of the percolator could be perforated in a manner corresponding to the bottom of the strainer which thus becomes unnecessary, and the ground coffee powder may be poured directly into the percolator, a paper filter being interposed between the ground coffee and the bottom of the percolator if desired.

WHAT I CLAIM IS:—

1. An appliance for preparing coffee beverage, comprising a pressure cooker, a coffee percolator and tubing leading from lower portion of the inside of the pressure cooker to the top thereof and from there to the top of the percolator, the tubing situated between the pressure cooker and the percolator being flexible, the tubing being connected to the top of the pressure cooker in a steam-tight manner but being readily detachable, the percolator being of such form that it can easily be placed directly onto a receptacle, for example, a cup or a jug, the bottom of the percolator being formed with an opening to permit beverage to pass from the percolator into such a receptacle.

2. An appliance as claimed in Claim 1, wherein the tubing is connected *via* a one-way valve to said percolator, the one-way valve opening, against the action of a spring, upon attainment of a predetermined pressure in the flexible tubing.

3. An appliance as claimed in Claim 1 or 2, wherein there is provided a relief valve at the top of the pressure cooker, and wherein the tubing consists of two pipes, the relief valve having a movable valve member to which the two pipes are connected in such manner that water can pass from one pipe to the other.

4. An appliance as claimed in any preceding Claim, wherein the coffee percolator includes a saucepan-like part, which is provided in order to contain ground coffee, and a lid, said saucepan-like part and said lid each having a heat-insulated handle and being adapted to engage one another with the aid of a bayonet joint, there being provided a sealing means, the arrangement being such that, upon the saucepan-like part and the lid being engaged one with the other, the joint is made substantially pressure-tight by said sealing means.

5. An appliance as claimed in Claim 4, wherein a strainer is provided for reception of ground coffee and is located between the saucepan-like part and the lid of the percolator.

6. An appliance as claimed in any preceding Claim, wherein the bottom of the percolator is formed with at least one annular step, to facilitate location of the percolator on the top of a receptacle.

7. An appliance as claimed in any preceding Claim, wherein the percolator tapers from top to bottom.

8. An appliance as claimed in any one of Claims 3 to 7, wherein removable parts of a relief valve, pertaining to the pressure cooker when in use for preparing food, can be replaced by the valve member, the two pipes and other removable parts in order to adapt the pressure cooker for use in the preparation of coffee beverage.

9. An appliance as claimed in Claim 1, wherein the bottom of the percolator has a plurality of perforations, in order to serve as a coffee strainer.

10. An appliance, for preparing coffee beverage, substantially as hereinbefore described with reference to the accompanying drawing.

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811,979 CO.PLETE SPECIFICATION
1 SHEET This drawing is a reproduction of the Original on a reduced scale.

Fig. 3

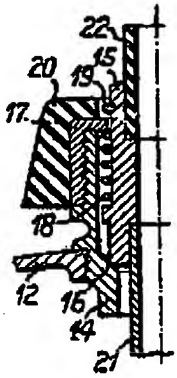

Fig. 2

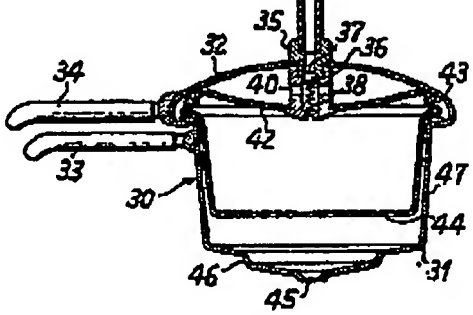

Fig. 4

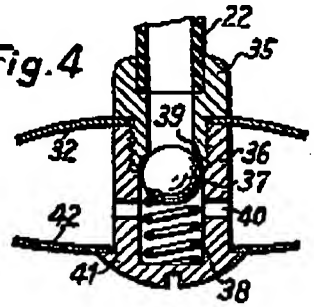

Fig. 1

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